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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/033,245	12/27/2001	David Botstein	P2930R1C7	9703

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EXAMINER	
FREDMAN, JEFFREY NORMAN	
ART UNIT	**PAPER NUMBER**
1637	

DATE MAILED: 04/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/033,245	BOTSTEIN ET AL.	
	Examiner	Art Unit	
	Jeffrey Fredman	1637	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *31 January 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *22-29 and 32-34* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *22-29 and 32-34* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Status

1. The current action is NON-final because, as Applicant correctly notes, the wrong claim set was examined and a preliminary amendment limited the claims to SEQ ID NO: 22.

Claims 22-29 and 32-34 are pending.

Claims 22-29 and 32-34 are rejected.

Any rejection which is not reiterated in this action is hereby withdrawn as no longer applicable.

Priority

2. Applicant identifies the earliest priority document as 60/119,537, filed February 10, 1999. It is noted that this priority document does not provide any utility whatsoever for the Pro3434 molecule.

Claim Rejections - 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claims 22-29 and 32-34 are rejected under 35 U.S.C. 101 because the claimed invention lacks patentable utility.

The current claims are drawn to a genus of proteins termed PRO3434 in the specification.

Credible Utility

Following the requirements of the Utility Guidelines (See: Federal Register: December 21, 1999 (Volume 64, Number 244), revised guidelines for Utility.), the first inquiry is whether a credible utility is cited in the specification for use of the proteins. The cited utilities in the specification are that the protein is encoded by a nucleic acid which is overexpressed in some lung or colon tumor in table 8. These utilities are credible.

Upon identification of credible utilities, the next issue is whether there are any well established utilities for the protein. No well established utilities for this specific PRO3434 protein, antibody or nucleic acid are identified in either the specification or in the cited prior art.

Substantial utility

Given the absence of a well established utility, the next issue is whether substantial utilities are disclosed in the specification. Here, the evidence in the specification provided is that the protein is encoded by a nucleic acid which is overexpressed in lung tumor. This relationship lacks any of the hallmarks of utility since there is no correlation between the protein and any disease.

As noted in the utility guidelines, basic research on a product to identify properties and intermediate products which themselves lack substantial utility are all insubstantial utilities (see page 6 of the Utility guideline training materials). First, there is NO data in the specification showing association of PRO3434 protein with any disease state.

Second, the overexpression data does not provide a substantial utility for several reasons. First, there is no showing that the overexpression was statistically significant and correlated with any diagnostic utility. The absence of such a diagnostic utility is particularly striking since there is no evidence that the overexpression effect was statistically significant. While the specification states "Only values that were above this cutoff ratio were determined to be significant" in paragraph 0930, there is no evidence to suggest that this overexpression is statistically significant.

Further, there is no evidence that the overexpression was reproducible. From the data presented in the specification, a single lung or colon tumor sample from a single patient may have been used. Such a result from a single patient would not support any utility because even if the nucleic acid was overexpressed in the one patient, there would be no expectation that the result would appear in even one other patient, so there is no evidence of record that the overexpression shown has any utility as a diagnostic or for any other purpose. Also, there is no evidence that the overexpression in the lung or colon tumor was anything other than a nonspecific effect due to the presence of an exogenous protein in the mixture.

Finally, the claims at issue are drawn to proteins. In the current case, there is no evidence that the protein is expressed in any particular tissue type. There is no evidence that the protein is overexpressed in cancerous cells, or that the protein has any utility whatsoever. As numerous references show, there is no necessary relationship between nucleic acid expression in a cell and protein expression. For example, Pennica et al (Proc. Natl. Acad. Sci. (1998) 95:14717-14722) shows that the

Wisp-2 DNA was amplified by the RNA expression was reduced in tumors (see abstract). Konopka (Proc. Natl. Acad. Sci. (1986) 83:4049-4052) states that "Protein expression is not related to amplification of the abl gene but to variation in the level of bcr-abl mRNA produced from a single Ph1 template. (see abstract)." So even if there is a gene amplification, that would provide no utility whatsoever for the protein, since the gene amplification does not necessarily relate to the expression information of the protein.

Third, the art supports the conclusion that many genes are irrelevant in gene microarray assays. As Li et al (J. Theoretical Biology (2002) 219:513-551) note "The presence of this power law function prevents an intrinsic cutoff point between "important" genes and "irrelevant" genes (see abstract)." Li continues in the text to note that "In a typical microarray experiment, however, the problem is not that one does not put enough genes on a chip, but rather having too many genes (see page 539, column 1)." This concept that genes whose expression does not change is irrelevant is not limited to Li. Ding et al (Bioinformatics (2003) 19(10):1259-66) notes "A two-way ordering of gene expression data can force irrelevant genes toward the middle in the ordering and can thus be discarded (See abstract)." So Ding expressly indicates that genes without change in expression profiling (and Ding's preferred embodiment is cancer genes) should be discarded. Ding notes at page 1259 that in a selection from thousands of genes, 50 are sufficient. Similarly, Sawiris et al (Cancer Research (2002) 62:2923-2928) notes "One of the advantages of specialized arrays is that they do not include irrelevant genes that may contribute to noise during data analysis (see page

2923, column 2)." Thus, the overwhelming state of the art supports the position that many genes are irrelevant, that genes whose expression does not change are noise, and that these irrelevant genes are so insignificant that ideally they are not placed on the arrays or used at all. The current gene, Pro3434, is such a gene. Given the absence of any evidence regarding sample size and the absence of any direct association with Pro3434 and lung or colon tumors, this gene represents noise. The prior art suggests that such genes should not be placed on the array. Therefore, genes such as Pro3434, lack substantial utility as useful on gene expression arrays.

Specific Utility

In the current case, even if the substantial utility argument above were found unpersuasive, there is no specific utility given for this protein and resultant nucleic acid. The protein has not been associated with any disease, any condition, any enzymatic activity or any other specific feature. The only association is the nucleic acid is overexpressed. As noted above, this utility is not relevant to the protein, since overexpression of the protein is not necessarily related to overexpression of the nucleic acid. As the utility guideline training materials note on page 5-6, "Similarly, a general statement of diagnostic utility, such as diagnosing an unspecified disease, would ordinarily be insufficient absent a disclosure of what condition can be diagnosed". Here, there is no disclosure of any condition which can be diagnosed and hence, no specific utility.

Finally, with regard to the utility analysis, the current situation directly tracks Example 4 of the utility guidelines, where a protein of entirely unknown function was characterized as lacking utility.

Claim Rejections - 35 USC § 112 – Enablement

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 22-29 and 32-34 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Factors to be considered in determining whether a disclosure meets the enablement requirement of 35 USC 112, first paragraph, have been described by the court in In re Wands, 8 USPQ2d 1400 (CA FC 1988). Wands states at page 1404,

> "Factors to be considered in determining whether a disclosure would require undue experimentation have been summarized by the board in Ex parte Forman. They include (1) the quantity of experimentation necessary, (2) the amount of direction or guidance presented, (3) the presence or absence of working examples, (4) the nature of the invention, (5) the state of the prior art, (6) the relative skill of those in the art, (7) the predictability or unpredictability of the art, and (8) the breadth of the claims."

<u>The nature of the invention</u>

The claims are drawn to the PRO3434 protein. The invention is in a class of invention which the CAFC has characterized as "the unpredictable arts such as chemistry and biology." Mycogen Plant Sci., Inc. v. Monsanto Co., 243 F.3d 1316, 1330 (Fed. Cir. 2001).

The breadth of the claims

The claims broadly encompass any protein that is 80% identical to the PRO3434 protein

Quantity of Experimentation

The quantity of experimentation in this area is extremely large since there is significant variability in the activity of polypeptides and antibodies. It would require significant study to identify the actual function of the PRO3434 protein, and identifying a use for this protein would be an inventive, unpredictable and difficult undertaking in itself. This would require years of inventive effort, with each of the many intervening steps, upon effective reduction to practice, not providing any guarantee of success in the succeeding steps.

The unpredictability of the art and the state of the prior art

The art is extremely unpredictable with regard to protein function in the absence of reliable information regarding the protein activity. Even very similar proteins, as shown by homology, may have very different functions (see Rost et al (J. Mol. Biol. (2002) 318(2):595-608). In the current case, where no specific information is known regarding the function of the protein in actual biological organisms, it is entirely

unpredictable what function and activity will be found for this protein. The prior art does not resolve this ambiguity, since no prior art activity is identified for the protein.

Further, the art supports the conclusion that many genes are irrelevant in gene microarray assays. As Li et al (J. Theoretical Biology (2002) 219:513-551) note "The presence of this power law function prevents an intrinsic cutoff point between "important" genes and "irrelevant" genes (see abstract)." Li continues in the text to note that "In a typical microarray experiment, however, the problem is not that one does not put enough genes on a chip, but rather having too many genes (see page 539, column 1)." This concept that genes whose expression does not change is irrelevant is not limited to Li. Ding et al (Bioinformatics (2003) 19(10):1259-66) notes "A two-way ordering of gene expression data can force irrelevant genes toward the middle in the ordering and can thus be discarded (See abstract)." So Ding expressly indicates that genes without change in expression profiling (and Ding's preferred embodiment is cancer genes) should be discarded. Ding notes at page 1259 that in a selection from thousands of genes, 50 are sufficient. Similarly, Sawiris et al (Cancer Research (2002) 62:2923-2928) notes "One of the advantages of specialized arrays is that they do not include irrelevant genes that may contribute to noise during data analysis (see page 2923, column 2)." Thus, the overwhelming state of the art supports the position that many genes are irrelevant, that genes whose expression does not change are noise, and that these irrelevant genes are so insignificant that ideally they are not placed on the arrays or used at all. Therefore, such genes lack substantial utility as useful on gene expression arrays.

Finally, the claims at issue are drawn to proteins. In the current case, there is no evidence that the protein is expressed in any particular tissue type. There is no evidence that the protein is overexpressed in cancerous cells, or that the protein has any utility whatsoever. As numerous references show, there is no necessary relationship between nucleic acid expression in a cell and protein expression. For example, Pennica et al (Proc. Natl. Acad. Sci. (1998) 95:14717-14722) shows that the Wisp-2 DNA was amplified by the RNA expression was reduced in tumors (see abstract). Konopka (Proc. Natl. Acad. Sci. (1986) 83:4049-4052) states that "Protein expression is not related to amplification of the abl gene but to variation in the level of bcr-abl mRNA produced from a single Ph1 template. (see abstract)." So even if there is a gene amplification, that would provide no utility whatsoever for the protein, since the gene amplification does not necessarily relate to the expression information of the protein.

Working Examples

The specification has one working example in which the nucleic acid may be overexpressed in, perhaps, one lung or colon tumor sample, but the working example lacks sufficient information regarding internal controls to show that the protein was, in fact, overexpressed, that the nucleic acid was associated with any disease or that the results are anything other than spurious.

Guidance in the Specification.

The specification did not teach any actual function or use for PRO3434. In fact, Pro3434 appears twice in the specification, once in reference to the figure legends and once in reference in Table 8. There is no other teachings regarding Pro3434.

Level of Skill in the Art

The level of skill in the art is deemed to be high.

Conclusion

Thus given the broad claims in an art whose nature is identified as unpredictable, the unpredictability of that art, the large quantity of research required to define these unpredictable variables, the lack of guidance provided in the specification, the presence of a working example which does not address the issue of the efficacy of the control and the negative teachings in the prior art balanced only against the high skill level in the art, it is the position of the examiner that it would require undue experimentation for one of skill in the art to perform the method of the claim as broadly written.

Claim Rejections - 35 USC § 112 – Written Description

7. Claims 22-26 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

In analysis of the claims for compliance with the written description requirement of 35 U.S.C. 112, first paragraph, the written description guidelines note regarding

genus/species situations that "Satisfactory disclosure of a ``representative number" depends on whether one of skill in the art would recognize that the applicant was in possession of the necessary common attributes or features of the elements possessed by the members of the genus in view of the species disclosed." (See: Federal Register: December 21, 1999 (Volume 64, Number 244), revised guidelines for written description.)

All of the current claims encompass a genus of proteins which are different from those disclosed in the specification, since the claims are not limited to SEQ ID NO: 22, but comprise variants with from 80% to 99% sequence identity to SEQ ID NO: 22. In the context of the written description guidelines, example 14 provides the closest fit to the current fact pattern. In example 14, a protein is claimed with percent identity language and an enzymatic function is recited. The current claims do not meet the standard imposed by example 14 because the claims lack two elements found in the example. First, the claims lack any recited function whatsoever for the protein. Second, the only recited function for the nucleic acid, which encodes the protein, is to serve as a hybridization probe for a lung or colon tumor. To the extent that this "function" for the nucleic acid relates to the protein at all, it has no structural relevance to the protein. That is, example 14 permits the use of the percent identity language because the function of the protein constrains the variations in the immense and undefined genus. In this case, where there is no function which so constrains the genus, the Pro3434 protein is not described.

Significantly, the genus includes variants for which no written description is provided in the specification. This large genus is represented in the specification by only the particularly named SEQ ID No 22. Thus, applicant has express possession of only one particular sequence in a genus which comprises hundreds of millions of different possibilities. No common element or attributes of the sequences are disclosed, not even the presence of certain domains.

There is no showing or evidence which links structural limitations or requirements to any particular functional limitations. Further, these claims encompass alternately spliced versions of the proteins, allelic variants including insertions and mutations, inactive precursor proteins which have a removable amino terminal end, and only specific nucleic and amino acid sequences have been provided. No written description of alleles, of upstream or downstream regions containing additional sequence, or of alternative splice variants has been provided in the specification.

It is noted in the recently decided case The Regents of the University of California v. Eli Lilly and Co. 43 USPQ2d 1398 (Fed. Cir. 1997) decision by the CAFC that

> "A definition by function, as we have previously indicated, does not suffice to define the genus because it is only an indication of what the gene does, rather than what it is. See Fiers, 984 F.2d at 1169- 71, 25 USPQ2d at 1605- 06 (discussing Amgen). It is only a definition of a useful result rather than a definition of what achieves that result. Many such genes may achieve that result. The description requirement of the patent statute requires a description of an invention, not an indication of a result that one might achieve if one made that invention. See In re Wilder, 736 F.2d 1516, 1521, 222 USPQ 369, 372- 73 (Fed. Cir. 1984) (affirming rejection because the specification does "little more than outlin[e] goals appellants hope the claimed invention achieves and the problems the invention will

> hopefully ameliorate."). Accordingly, naming a type of material generally known to exist, in the absence of knowledge as to what that material consists of, is not a description of that material. "

The current situation is a definition of the compound without identifying the structure function relationship of the compound, so that the compound is claimed solely by a sequence identity to SEQ ID NO: 22 without any functional limitation whatsoever.

In the instant application, an immense number of SEQ ID NOs are described. Also, in Vas-Cath Inc. v. Mahurkar (19 USPQ2d 1111, CAFC 1991), it was concluded that:

> "...applicant must also convey, with reasonable clarity to those skilled in art, that applicant, as of filing date sought, was in possession of invention, with invention being, for purposes of "written description" inquiry, whatever is presently claimed."

It is particularly evident that these claims encompass subject matter not described since the precise problem in Lilly, where the Rat insulin was 81% identical to the human insulin, applies here. The current protein, SEQ ID NO: 22, has 85% identity to the canine protein of Genbank Accession Number XP_536898 as shown in the alignment below.

```
Canine   ,   1289 MHILVVHAMVILLTLGPPRAGDGEFQALLDIWFPEKQPLPTAFLVDTSEEALLLPDWLKL
SEQ 22   ,      1 MHILVVHAMVILLTLGPPRADDSEFQALLDIWFPEEKPLPTAFLVDTSEEALLLPDWLKL
                  ******************** * ************  **********************

Canine   ,   1349 RMIRSEVPRLVDAALQDLEPQQLLLFVQSFGIPVSSMSKLLQYLDQAVAHDPQTLEQNIM
SEQ 22   ,     61 RMIRSEVLRLVDAALQDLEPQQLLLFVQSFGIPVSSMSKLLQFLDQAVAHDPQTLEQNIM
                  ******* ********************************** ****************

Canine   ,   1409 DKNYMAHLVEVQHERGASGGQTFHSLLTASLPPRRDSTEAPKSKSSPEQPSGQGRTRAVT
SEQ 22   ,    121 DKNYMAHLVEVQHERGASGGQTFHSLLTASLPPRRDSTEAPKPKSSPEQPIGQGRIRVGT
                  ****************************************** ******* **** *  *

Canine   ,   1469 QVRVLAPEDDLAGMLLQIFPLSPGPRWQSSSARPAALALQQALGQELARVRQGSPEVSGV
SEQ 22   ,    181 QLRVLGPEDDLAGMFLQIFPLSPDPRWQSSSPRPVALALQQALGQELARVVQGSPEVPGI
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                * *** ******** ******** ******* ** *************** ****** *

Canine   ,   1529 TVRLLQAIATLLNSPHSGALVMSMHRSHFLACPLMRQLCQYQRCVPQDTGFSSLFLKVLM
SEQ 22   ,    241 TVRVLQALATLLSSPHGGALVMSMHRSHFLACPLLRQLCQYQRCVPQDTGFSSLFLKVLL
                *** *** **** *** ***************** ************************

Canine   ,   1589 QTLQWLDGSAGEGGPLQAQLKLFAAQYSARRRISDARSGLLRLAEALAFRGDLEVVSSTV
SEQ 22   ,    301 QMLQWLDSPGVEGGPLRAQLRMLASQASAGRRLSDVRGGLLRLAEALAFRQDLEVVSSTV
                * *****    ***** ***   * * ** ** ** * ************ *********

Canine   ,   1649 RAVVATLKSGEKCGVEPELVGKVLRGLIEVGSPHLEELLAALLAP----APMSPTLRPVA
SEQ 22   ,    361 RAVIATLRSGEQCSVEPDLISKVLQGLIEVRSPHLEELLTAFFSATADAASPFPACKPVV
                *** *** *** * *** *  *** ***** ******** *         *   *   **

Canine   ,   1705 VVSSLLLQDKEPPVPGEPEADGSSSEAVQLGPCSGLLVDWLEMLDPEVISSCPDLQQRLL
SEQ 22   ,    421 VVSSLLLQEEEPLAGGKPGADGGSLEAVRLGPSSGLLVDWLEMLDPEVVSSCPDLQLRLL
                ******** **   * * *** * *** *** *************** ******* ***

Canine   ,   1765 FFRNEGKGHPGPQVPSFRPYLLALLTHQSSWSTLHQCIRILLGKNREQRFDPSASLDFLW
SEQ 22   ,    481 FSRRKGKGQA--QVPSFRPYLLTLFTHQSSWPTLHQCIRVLLGKSREQRFDPSASLDFLW
                * *  ***    ********** * ****** ******* **** ***************

Canine   ,   1825 ACIHVPRIWQGRDQRTPQKRREELVLRVQAAELIGLVELILAEAEARSQDGDAAACSLLQ
SEQ 22   ,    539 ACIHVPRIWQGRDQRTPQKRREELVLRVQGPELISLVELILAEAETRSQDGDTAACSLIQ
                ****************************  *** ********** ****** ***** *

Canine   ,   1885 ARLPLLLSCCRGHDESVRKVTVHLTSCLQQWGDSVLGRRCRDLLVQLYLQWPELRVPLPE
SEQ 22   ,    599 ARLPLLLSCCCGDDESVRKVTEHLSGCIQQWGDSVLGRRCRDLLLQLYLQRPELRVPVPE
                ********** * ******** **  * ***************** ***** ****** **

Canine   ,   1945 ALLHSGGATGSSTCKLDGLIHRFITLLADTSDSRSSENRVADANMACRKLAVAHPILLLR
SEQ 22   ,    659 VLLHSEGAASSSVCKLDGLIHRFITLLADTSDSRALENRGADASMACRKLAVAHPLLLLR
                 **** **  ** *********************  *** *** *********** ****

Canine   ,   2005 HLPMIAALLHGRTHLNFQEFRQQNHLTFFLHVLGVLELLQPQVFQNEHQGALWDCLRSFV
SEQ 22   ,    719 HLPMIAALLHGRTHLNFQEFRQQNHLSCFLHVLGLLELLQPHVFRSEHQGALWDCLLSFI
                ************************** ****** ****** **  ********** **

Canine   ,   2065 RLLLSYRKSSRHLAPFIHKFVHFTHKYVTCNAPAAVSFLQKHADALHDLSFDSSDLVMLK
SEQ 22   ,    779 RLLLNYRKSSRHLAAFINKFVQFIHKYITYNAPAAISFLQKHADPLHDLSFDNSDLVMLK
                **** ********* ** *** * *** * ***** ******** ******* *******

Canine   ,   2125 SLLAGLSLPSRDGRADRGLDEEGEDESSAGSLPLVSVSLFTPLTAAEMAPYMKRLSRGQT
SEQ 22   ,    839 SLLAGLSLPSRDDRTDRGLDEEGEEESSAGSLPLVSVSLFTPLTAAEMAPYMKRLSRGQT
                ************ * ********* ***********************************

Canine   ,   2185 VEDLLEVLSDIDEMSRRRPEILGFFSTNLQRLMSSAEEPCRSLAFGLALRSIQNNPSFAA
SEQ 22   ,    899 VEDLLEVLSDIDEMSRRRPEILSFFSTNLQRLMSSAEECCRNLAFSLALRSMQNSPSIAA
                ********************** *************** ** *** ***** ** ** **

Canine   ,   2245 DFLPTFMCCLGSRDFEVVQTALRNLPEYTLLCQEHAAVLLHRAFLVGMYGQMDTSVQISE
SEQ 22   ,    959 AFLPTFMYCLGSQDFEVVQTALRNLPEYALLCQEHAAVLLHRAFLVGMYGQMDPSAQISE
                 ****** **** *************** ************************ * ****
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Canine  ,    2305 ALRILHMEAVM
SEQ 22  ,    1019 ALRILHMEAVM
                  ***********
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In the application at the time of filing, there is no record or description which would demonstrate conception of any proteins other than those expressly disclosed which comprise sequences that share 80% to 99% sequence identity with SEQ ID NO 22. Therefore, the claims fail to meet the written description requirement by encompassing sequences which are not described in the specification.

Response to Arguments

8. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey Fredman whose telephone number is (571)272-0742. The examiner can normally be reached on 6:30-3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Benzion can be reached on (571)272-0782. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jeffrey Fredman
Primary Examiner
Art Unit 1637
4/5/05